# MITSUBISHI

COLOR MONITOR
OPERATION MANUAL

MODEL
AM-4201R
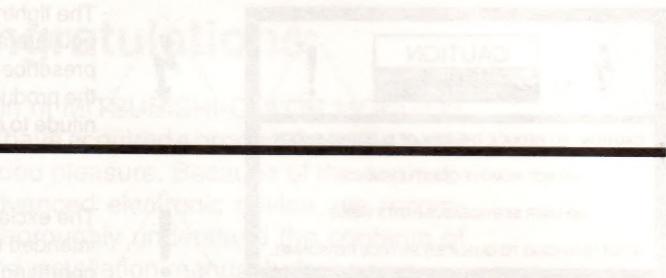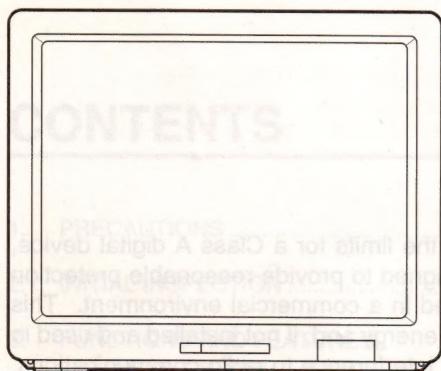
FEATURES:
1. Automatic tracking of horizontal and vertical scanning frequencies.
   f(H) = 15.7/20 - 64kHz
   f(V) = 45 - 120Hz
2. 0.96mm (center) stripe pitch and tinted glass 40 inches viewable CRT.
   Equipped DBF (Dynamic Beam Focus)
3. Various Input Compatibility
   • NTSC/PAL/SECAM/NTSC4.43/Composite Video, S-Video
   • RGB ANALOG
   • RGB TTL
4. Easy to operate microcomputer and wireless remote control
5. RS-232C Interface
6. Optimum picture setup using max. 32 memory modes

| CAUTION |
| RISK OF ELECTRIC SHOCK |
| DO NOT OPEN |

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,

DO NOT REMOVE COVER (OR BACK)

NO USER SERVICEABLE PARTS INSIDE

REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

FCC COMPLIANCE NOTICE

NOTE:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his or her own expense.

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

Congratulations

On your selection of MITSUBISHI COLOR MONITOR AM-4201R. You have acquired a product that will greatly enhance your video pleasure. Because of the sophistication of this advanced electronic device, we recommend that you thoroughly understand the contents of this operation and installation manual before using.

CONTENTS

1. PRECAUTIONS

In the interest of safety, please observe the following precautions.

NEVER REMOVE THE BACK COVER
The high voltage circuit will be exposed.
A careless touch may cause an electrical shock.

PROTECT THE POWER CORD
Damage to the power cord may cause fire or shock hazard.
When unplugging monitor, hold power cord by the plug only and remove carefully.

MAINTAIN GOOD VENTILATION
Ventilation slots and holes are provided on the top, rear sides, and bottom of this unit.
Place the unit on a hard and level surface, and locate at least 4 inches from walls to ensure proper ventilation.

NEVER INSERT ANY OBJECT INTO THE UNIT
Foreign objects of any kind inserted into this unit constitute a safety hazard and may cause extensive damage.

DO NOT PLACE ANYTHING ON THE MONITOR
Heavy objects placed on the monitor may cause damage or obstruct proper ventilation.
Do not place on this unit any receptacle such as a vase or glass which contains any liquid.
Using this unit with water or any liquid which might spill into the unit may cause fire and electric shock.

DO NOT SUBJECT THE SET TO IMPACT OR MECHANICAL SHOCK
Take care not to drop or otherwise jar the monitor when you carry it.
Special attention should be given to protecting the CRT.

BE CAREFUL REGARDING MAGNETIC INFLUENCES
Placing a magnet, speaker system, printer, or floppy disk that will generate magnetism, near the display unit, may cause discoloration.
Your attention is called to this point.

DO NOT USE IN THE WRONG PLACE
Please refrain from subjecting the unit to vibration or where hydrogen sulfide or sulfur oxide is present.

CARE OF THE CABINET
Unplug and clean with a soft cloth slightly moistened with a mild soap and water solution.
Allow to dry completely before operating.
Never use petroleum base solutions or abrasive cleaners.

DO NOT PLACE THE MONITOR ON AN UNSTABLE CART, STAND, OR TABLE
The monitor may fall and cause serious injury to users or serious damage to the appliance.
Please use only with a stable cart, stand, or table.
The appliance and cart combination should be moved with care.
Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

DO NOT HOLD THE SPEAKERS
Holding the speakers during carrying may cause damage to the monitor and injury to users.
Hold the handles when you carry the monitor.

S3126A

3

2. INITIAL INSPECTION

Carefully unpack and inspect the monitor and accompanying parts.
Compare your parts with those shown below.

AM-4201R

Remote control

Power cord

- 4 Batteries
- Operation manual
- Warranty card

4

3. FUNCTIONS AND FEATURES

FRONT PANEL

FRONT TERMINAL

INPUT VIDEO 1

S-VIDEO   VIDEO   L (MONO) R

S-VIDEO Input terminal

AUDIO Input terminal

VIDEO Input terminal

FRONT CONTROL PANEL

| DEGAUSS | CONT | BRIGHT | ADJUST | FUNC. | INPUT | VOL. | POWER |
| MENU | ENTER | CANCEL | | | | RESET | |

⑨ ⑧ ⑦ ⑤ ③ ②

⑩ ⑪ ⑫ ⑥ ④ ⑬
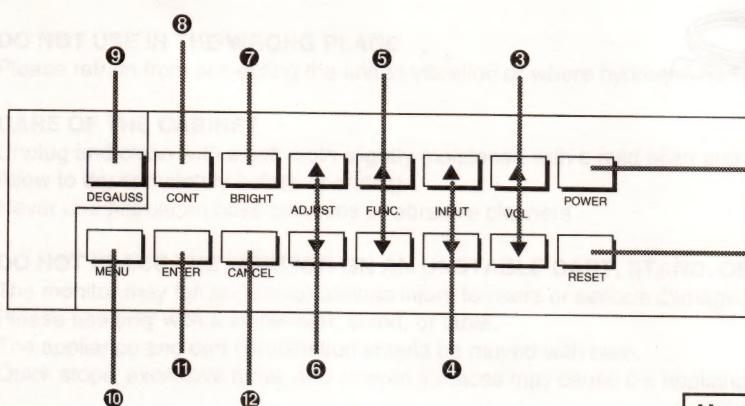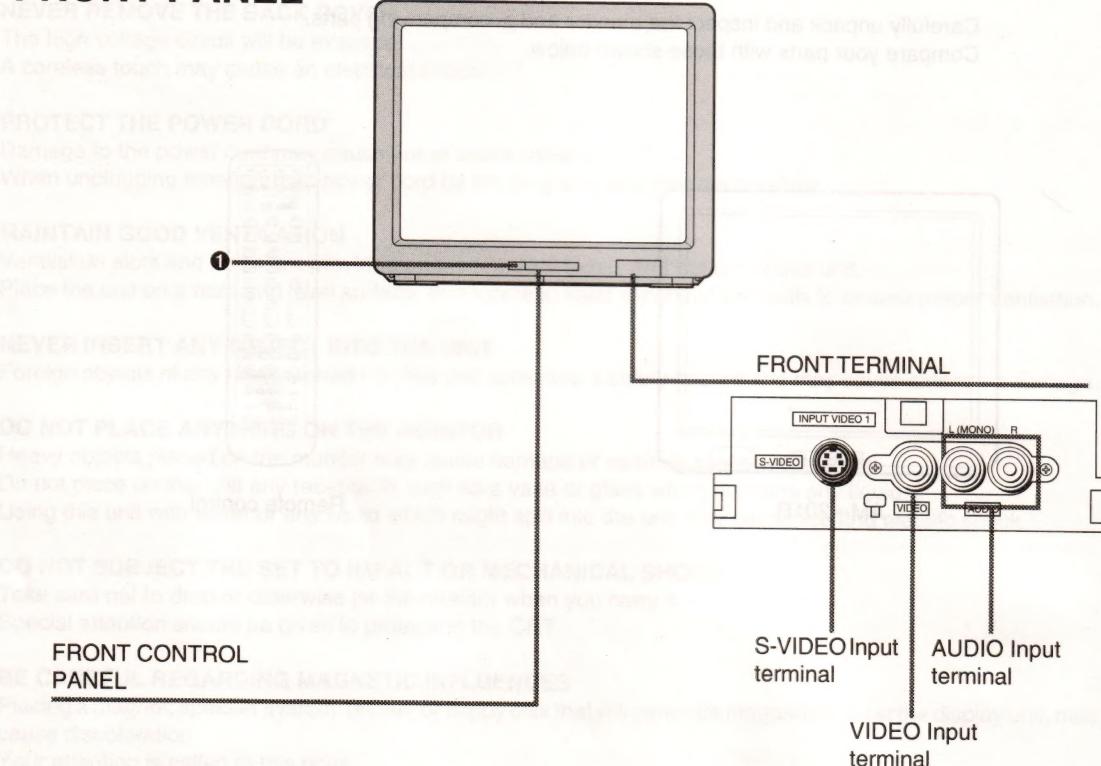
How to open the front control panel
Press the center of the front control door (marked "PUSH") to release the door.
To close, push it forward.

The function of the front control panel and the wireless remote control are the same.
Therefore, the following descriptions apply to both.

❶ Main power button (MAIN POWER)
Use to turn the MONITOR on or off. When the main power button is ON, the power indicator illuminates in red and the monitor is in stand-by condition.

❷ Power button (POWER)
Use to turn the MONITOR on or off to a fully operational condition.
When the power button is ON in stand-by condition, the power indicator illuminates in green.

❸ Volume button (VOL)
Use to adjust the volume level.

❹ Input signal select button (INPUT)
Use to select the input signal (RGB1, RGB2, RGB3, VIDEO1, VIDEO2, VIDEO3) you wish to display on the monitor.

❺ Function button (FUNC)
• Use to display the following picture adjustment functions one by one.
When pressing the ADJUST button, the setting value is changed.
RGB modes: BAS/TREBLE/BAL/H-SIZE/H-POSI/V-SIZE/V-POSI
VIDEO modes: BAS/TREBLE/BAL/PIX/COL/TINT/NR/TEMP

• Use to select items of the menus.
See page 19.

❻ Adjust button (ADJUST)
Use to adjust the level of the selected picture adjustment function, and to select ON/OFF and letters in the menu modes.

❼ Brightness button (BRIGHT)
Use to adjust brightness level.
After pressing the BRIGHT button, the ADJUST buttons are used for the level control.

❽ Contrast button (CONT)
Use to adjust contrast level.
After pressing the CONT button, the ADJUST buttons are used for the level control.

❾ Degauss button (DEGAUSS/DEG)
Use to degauss the CRT and correct color impurity.

❿ Menu button (MENU)
Use to show menu modes, and to exit from the menu modes.

⓫ Enter button (ENTER)
Use to determine the function in the menu modes, and to memorize the RGB signal (see page 24).

⓬ Cancel button (CANCEL)
Use to cancel the setting in the menu mode.

⓭ Reset button (RESET)
When pressing the RESET button twice, all adjustments returns to their preset positions. (When first pressed, the letters on the screen are shown in yellow. When secondly pressed, the initial setting returns.)
Press the CANCEL button to cancel resetting when the letters are shown yellow.

6
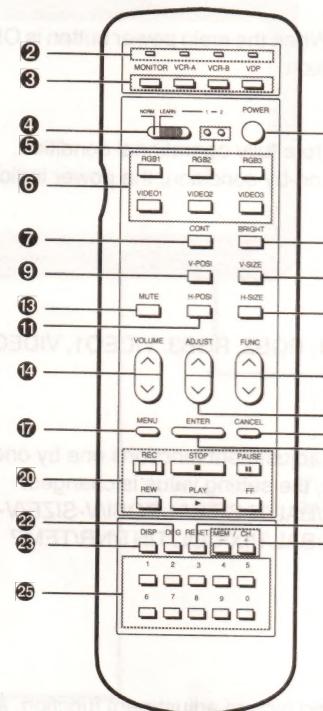
REMOTE CONTROL

PREPARATION FOR THE REMOTE CONTROL
SAFETY PRECAUTIONS

❶ Remove the cover of the remote control by pulling out in the direction of the arrow.

❷ Load the four batteries, making sure that they are positioned correctly (+ to +, − to −).

❸ Replace the cover sliding both sides of the cover into the slots of the remote control.
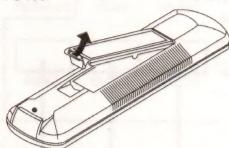
CAUTION:

Avoid dropping the remote control on a hard surface.
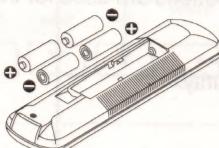
Do not allow the remote control to get wet or become heated.
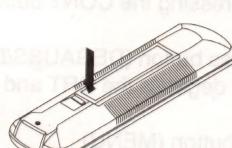
Use only a soft, slightly moistened cloth for cleaning.

7

REMOTE CONTROL FUNCTIONS

❶ Power button (POWER)
Use to turn the MONITOR on or off in stand-by condition.

❷ Page indicators
When pressing remote control buttons to operate another equipment, the corresponding page indicator illuminates.

❸ Page select buttons
In the "Normal" mode, press to choose the component to be operated:
MONITOR, VCR-A, VCR-B or VDP. In the "Learn" mode, press to choose the position for learning other remote's codes. (See page 28 for details.)

❹ Normal/Learning switch
For normal use, set to the "NORM" position. Set this switch to "LEARN" position to place remote control learning mode.

❺ Learning indicators
The learning indicator illuminates when programming the remote control.

❻ Input signal select buttons
Use to directly select the input signal (RGB1, RGB2, RGB3, VIDEO1, VIDEO2, VIDEO3) you wish to display on the monitor.

❼ Contrast button (CONT)
Use to adjust contrast level.
After pressing the CONT button, the ADJUST buttons are used for the level control.

❽ Brightness button (BRIGHT)
Use to adjust brightness level.
After pressing the BRIGHT button, the ADJUST buttons are used for the level control.

❾ Vertical position button (V-POSI)
Use to adjust the vertical position of the picture only in the RGB mode.
After pressing the V-POSI button, the ADJUST buttons are used for the level control.

❿ Vertical size button (V-SIZE)
Use to adjust the vertical size of the picture only in the RGB mode.
After pressing the V-SIZE button, the ADJUST buttons are used for the level control.

⓫ Horizontal position button (H-POSI)
Use to adjust the horizontal position of the picture only in the RGB mode.
After pressing the H-POSI button, the ADJUST buttons are used for the level control.

⓬ Horizontal size button (H-SIZE)
Use to adjust the horizontal size of the picture only in the RGB mode.
After pressing the H-SIZE button, the ADJUST buttons are used for the level control.

⑬ Mute control (MUTE)
   Use to turn the sound off completely, press again to restore sound.

⑭ Volume control (VOL)
   Use to adjust the volume level.

⑮ Adjust button (ADJUST)
   Use to adjust the level of the selected picture adjustment function, and to select ON/OFF and letters in the menu modes.

⑯ Function button (FUNC)
   ● Use to display the following picture adjustment functions one by one.
   RGB modes: BAS/TREBLE/BAL
   VIDEO modes: BAS/TREBLE/BAL/PIX/COL/TINT/NR/TEMP

   ● Use to select items of the menus.
   See page 19.

⑰ Menu button (MENU)
   Use to show the menu modes, and exit from the menu mode.

⑱ Cancel button (CANCEL)
   Use to cancel the setting in the menu mode.

⑲ Enter button (ENTER)
   Use to determine the function in the menu modes, and to memorize the RGB signal.
   See page 24.

⑳ VCR/VDP control buttons
   Use to operate VCR or Video disk player.

㉑ Reset button (RESET)
   When pressing the RESET button twice, all adjustments returns to their preset positions. (When first pressed, the letters on the screen are shown in yellow, when secondly pressed, the initial setting returns.)
   Press the CANCEL button to cancel resetting when the letters are shown yellow.

㉒ Degauss button (DEGAUSS/DEG.)
   Use to degauss the CRT and correct color impurity.

㉓ Display button (DISP)
   Use to show on screen the present operating status such as the selected input terminal and the type of the input signal.

㉔ Memory buttons (MEM/CH)
   Use to select the memorized data of each memory number in RGB mode.
   See pages 24 ~ 25.

㉕ Number buttons
   Use to input the ID number of the monitor you desire to control.
   See page 26.

REAR PANEL
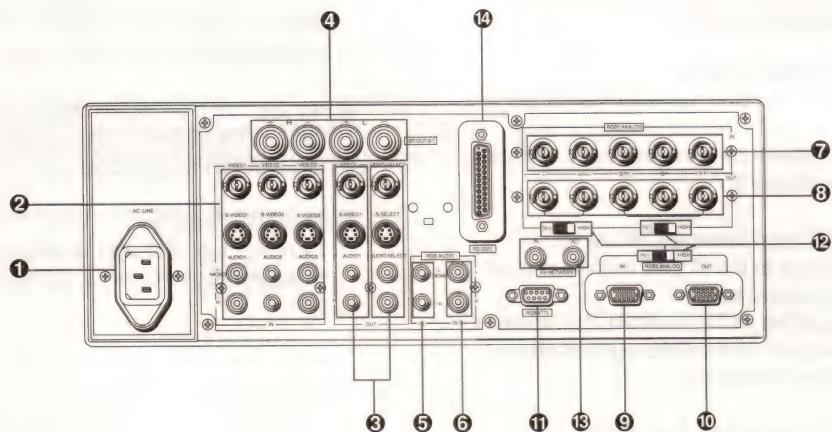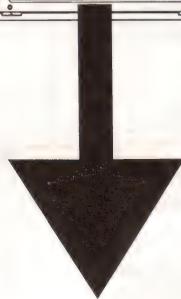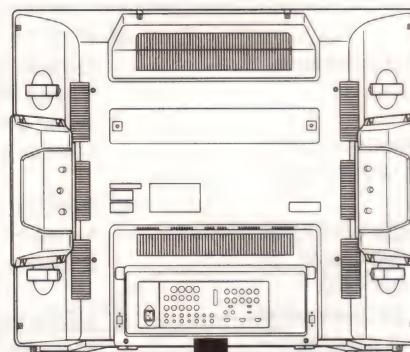
❶ Power Inlet
This inlet connects to power cord (accessory). Insert cord firmly.

❷ VIDEO 1/2/3 input terminals (BNC/S-VIDEO)
Input composite video signal/S-VIDEO signal/ audio signal (L and R).
When composite video signal and S-VIDEO signal are connected at the same time, S-VIDEO signal is selected automatically.
Also, when inputting signal from front panel terminals and rear video 1 input panel terminals at the same time, the signal from front panel terminals is selected automatically.

❸ VIDEO output terminals
A) VIDEO output terminal
Directly outputs the VIDEO/S-VIDEO/AUDIO input signal fed from VIDEO 1 input terminal.
B) VIDEO select terminal
Outputs the VIDEO/S-VIDEO/AUDIO input signal selected with INPUT button on front panel control or INPUT SELECT button on wireless remote control.

❹ SPEAKER output terminals
Connect the provided speaker (Impedance 8Ω).
Adjust the volume by pressing the VOLUME button.(See pages 5,7)

❺ RGB AUDIO input terminals (RCA)
Connect directly to the AUDIO output terminal of personal computer, etc.
In operating either in TTL or ANALOG modes, the audio output from the RGB audio system is input to these connectors.

❻ RGB AUDIO output terminals (RCA)
Directly outputs the input signal fed from RGB AUDIO input terminal.

❼ RGB 1 input terminals (BNC)
Inputs RGB ANALOG signal of RGB analog units e.g, personal computer etc..

❽ RGB 1 output terminals
Outputs RGB ANALOG signal input from RGB 1 input terminals.
When using this terminal, set the impedance selector switch to the "HIGH" position.

❾ RGB 2 input terminals (shrink D-SUB 15 pin)
Inputs RGB ANALOG signal of RGB analog units e.g, personal computer etc..

❿ RGB 2 output terminals (shrink D-SUB 15 pin)
Outputs RGB ANALOG signal input to RGB 2 input terminals.
When using this terminal, set the impedance selector switch to the "HIGH" position.

⓫ RGB 3 input terminals (D-SUB 9pin)
Input RGB TTL signal of RGB TTL units e. g, personal computer etc.. (See page 32)

⓬ Impedance selector switch
Normally set the switch on the RGB side to the "75Ω" position and the switch on the sync. side to "HIGH" position. Slide the selector to the "HIGH" position when R,G/G+SYNC or B signal outputs from the RGB output terminals.

⓭ AV-NETWORK input/output terminals Connect MITSUBISHI products equipped with AV network terminals. (See page 18)

⓮ RS-232C terminal
Connect the unit with a personal computer through RS-232C cable. (See pages 30-34)

4. CONNECTING THE MONITOR TO YOUR EQUIPMENT

Ⓐ VCR/VDP
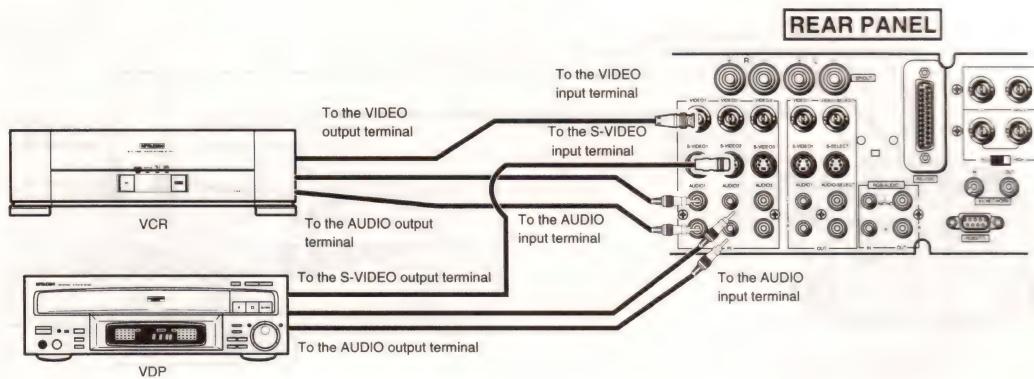
REAR PANEL

To the VIDEO output terminal

To the VIDEO input terminal

To the S-VIDEO input terminal

VCR

To the AUDIO output terminal

To the AUDIO input terminal

To the S-VIDEO output terminal

To the AUDIO input terminal

VDP

To the AUDIO output terminal

- **When connecting the unit to another equipment, be sure to switch off each equipment.**

❶ Switch on the power of each unit.
❷ Select "VIDEO 1" to display a picture from the VCR, or "VIDEO 2" to display a picture from the VDP, by pressing the INPUT SIGNAL SELECT button on the remote control or the INPUT button on the front control panel. (See pages 5.7.)
❸ Adjust the picture setting if necessary.
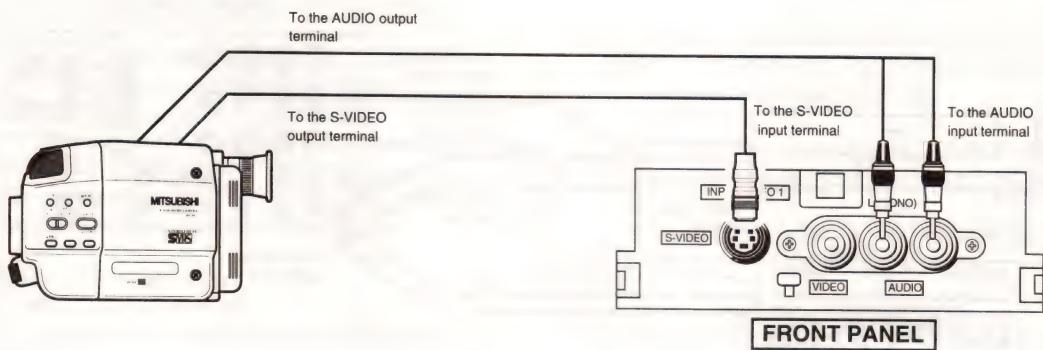
Ⓑ VIDEO CAMCORDER

To the AUDIO output terminal

To the S-VIDEO output terminal

To the S-VIDEO input terminal

To the AUDIO input terminal

INPUT 1

S-VIDEO

L (MONO)

VIDEO   AUDIO

FRONT PANEL

- **When connecting the unit to another equipment, be sure to switch off each equipment.**

❶ Switch on the power of each unit.
❷ Select "VIDEO 1" to display a picture from the video camcorder, by pressing the INPUT SIGNAL SELECT button on the remote control or the INPUT button on the front control panel.

When the video camcorder is connected with the front input terminal and rear Video 1 input terminal of the unit at the same time, the front input terminal is given priority.

❸ Adjust the picture setting if necessary.

Connection with RGB ANALOG Signal Equipment

© MAC-II (SYNC ON GREEN)
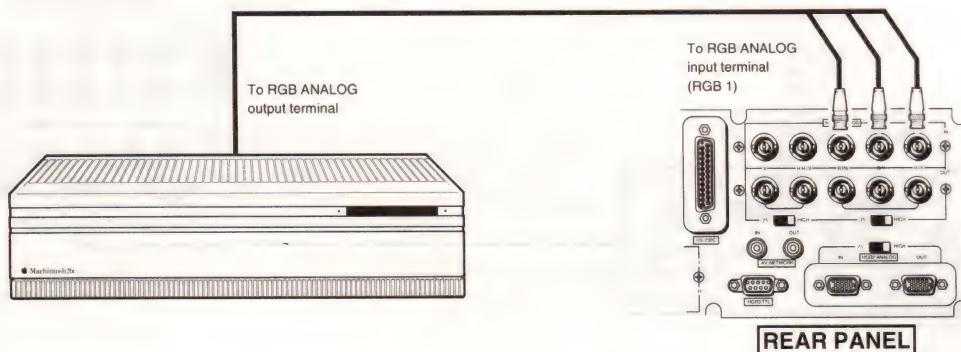
To RGB ANALOG
output terminal

To RGB ANALOG
input terminal
(RGB 1)

REAR PANEL

- **When connecting the unit to another equipment, be sure to switch off each equipment.**

❶ Set the impedance selector switch on the RGB side to the "75 Ω".
❷ Switch on the power of each unit.
❸ Select "RGB 1" by pressing the INPUT SIGNAL SELECT button on the remote control or the INPUT button on the front control panel.
❹ Display the SETUP MENU and set the SYNC. SEL to "SYNC ON GREEN". (See page 22.)
   A picture from the Mac-II is displayed and the memory number is shown.
❺ Set the CLAMP to "BACK PORCH" in the MENU .
   (See page 20.)
❻ Press the MENU button.
   The menu will be closed.
❼ Adjust the picture setting if necessary.
❽ Press the ENTER button to memorize all picture settings.
❾ Display the MENU on the screen and set the "MEMORY NAME" if necessary. (See page 20.)

Connection with RGB ANALOG Signal Equipment

⒟ PS/2

REAR PANEL

To RGB ANALOG
output terminal

To RGB ANALOG
input terminal (RGB 2)
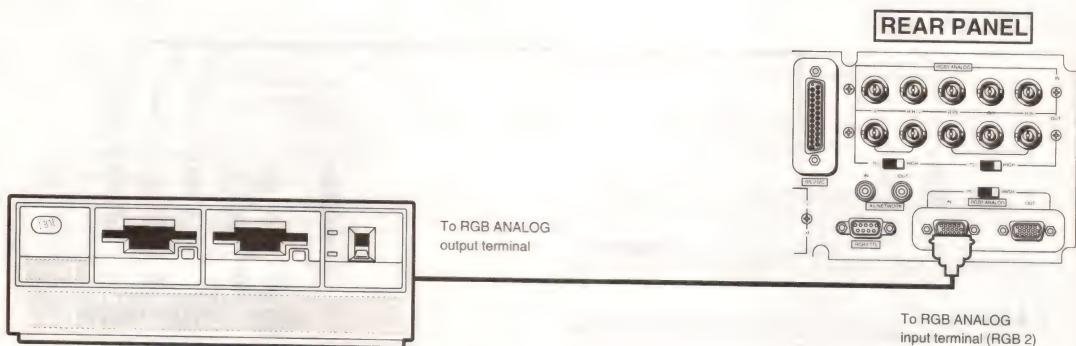
- **When connecting the unit to another equipment, be sure to switch off each equipment.**

❶ Set the impedance selector switch to "75Ω".
❷ Switch on the power of each unit.
❸ Select "RGB 2", by pressing the INPUT SIGNAL SELECT button on the remote control or the INPUT button on the front control panel.
❹ A picture from the P/S-II is displayed and the memory number is shown.
❺ Adjust the picture if necessary.
❻ Press the ENTER button to memorize all picture settings.
❼ Display the MENU on the screen and set the "MEMORY NAME" if necessary. (See page 20.)

Connection with RGB ANALOG Signal Equipment

Ⓔ HI-VISION (Y, P$_B$, P$_R$)

To RGB ANALOG input terminal (RGB1)

P$_B$ Y   P$_R$

To RGB ANALOG output terminal

To RGB AUDIO output terminal

To RGB AUDIO input terminal

REAR PANEL
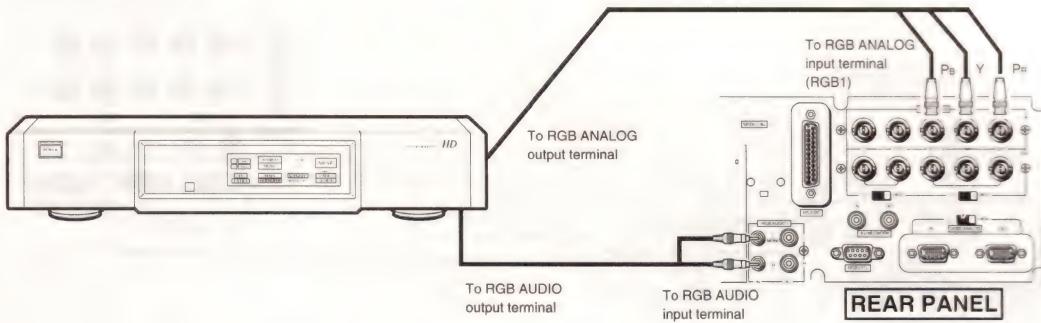
• When connecting the unit to another equipment, be sure to switch off each equipment.

❶ Set the impedance selector switch to "75Ω".
❷ Switch on the power of each unit.
❸ Select "RGB 1", by pressing the INPUT SIGNAL SELECT button on the remote control or the INPUT button on the front control panel.
   A picture from the HI-VISION is displayed and the memory number is shown.
❹ Set the HI-VISION to ON in the menu mode.
❺ Press the ENTER button to display the HI-VISION menu.
❻ Set the ASPECT to "16:9" or "4:3".
❼ Set the INPUT to "Y, Pb, Pr" according to the input signal.
❽ Press the MENU button.
   The menu will be closed.
❾ Adjust the picture if necessary.
❿ Press the ENTER button to memorize all picture settings.
⓫ Display the MENU on the screen and set the "MEMORY NAME" if necessary. (See page 20.)

Connection with RGB TTL Signal Equipment
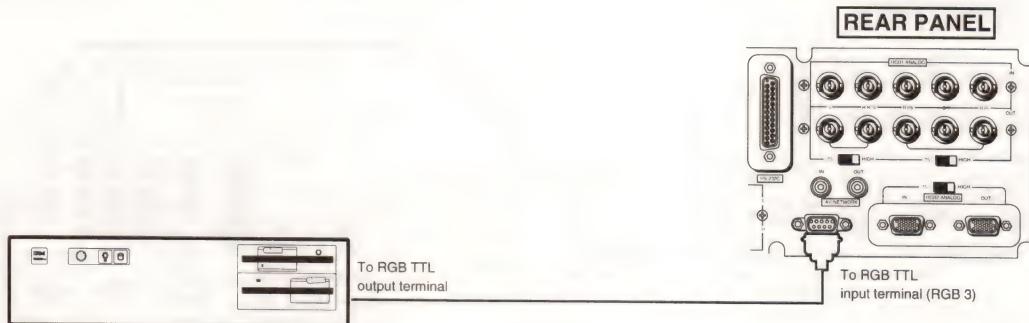
Ⓕ PC/AT

REAR PANEL

To RGB TTL
output terminal

To RGB TTL
input terminal (RGB 3)

- **When connecting the unit to another equipment, be sure to switch off each equipment.**

❶ Switch on the power of each unit.
❷ Select "RGB 3", by pressing the INPUT SIGNAL SELECT button on the remote control or the INPUT button on the front control panel.
❸ A picture from the PC/AT is displayed and the memory number is shown.
❹ Set the TTL COLOR to AUTO in the menu mode. (See page 20.)
❺ Press the MENU button.
The menu will be closed.
❻ Adjust the picture if necessary.
❼ Press the ENTER button.
❽ Display the MENU on the screen and set the "MEMORY NAME" if necessary. (See page 20.)

17

ⓖ AV-NETWORK

You can control the equipment connected with the AV network by controlling the monitor with the remote control.

REAR PANEL

To VIDEO output terminal

To VIDEO input terminal

To AUDIO input terminal

To AUDIO output terminal

To AV-NETWORK input terminal

To AV-NETWORK output terminal
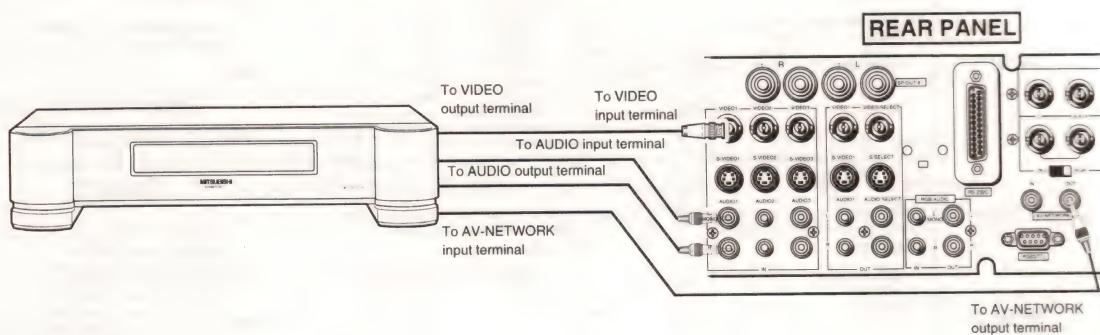
- **When connecting the unit to another equipment, be sure to switch off each equipment.**

NOTE:
If connecting the monitor to other equipments so that the monitor's AV network output signal returns to the input terminal through other equipments. The monitor may not operate.

18
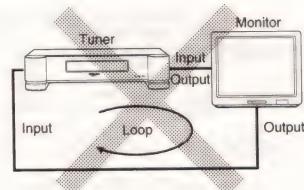
5. SETTING THE MENU

This unit will display the menu on the screen according to the each input terminal.
You can set each of the following items in the menu mode on the screen. Follow the steps shown below to select in the menu mode.

Input terminal

RGB 1

```
RGB1 MENU <**>

  MEMORY NAME      ········
  H-SCAN           A
  CLAMP            SYNC
  HI-VISION        ON↓

  SET UP .

Press < MENU > to return
```
Page 20

RGB 2

```
RGB2 MENU <**>

  MEMORY NAME      ········
  H-SCAN           A
  CLAMP            SYNC

  SET UP .

Press < MENU > to return
```
Page 20

RGB 3

```
RGB3 MENU <**>

  MEMORY NAME      ········
  H-SCAN           A
  TTL-COLOR        AUTO

  SET UP .

Press < MENU > to return
```
Page 20
* 1

VIDEO 1
VIDEO 2
VIDEO 3

```
VIDEO 1 MENU

  SCAN          OVER
  SYSTEM        AUTO
  BLUE-ONLY     OFF
  AFC           FAST

  SET UP ↓

Press < MENU > to return
```
Page 21

```
SET UP MENU

  ID NUMBER        0 0
  ON SCREEN        ON
  LAST POWER       OFF
  SYNC SEL         SYNC ON G
  PURITY           0 0
  AUTO P. OFF      OFF
  MEMORY COPY .
  MEMORY NAME LIST .

Press < MENU > to return
```
Page 22
* 2

```
HI-VISION MENU

  ASPECT          16 : 9
  INPUT           Y , Pb , Pr

  SET UP .

Press < MENU > to return
```
Page 20

```
MEMORY COPY

  MEMORY DATA          SEND
  ENTER:START

Press < MENU > to return
```
Page 27

```
MEMORY NAME LIST
                  HKHz  VHz
  01 ········ 00.0   00 -
  02 ········ 00.0   00 -
  03 ········ 00.0   00 -
  04 ········ 00.0   00 -
  05 ········ 00.0   00 -
  06 ········ 00.0   00 -
  07 ········ 00.0   00 -

Press < MENU > to return
```
Page 24

BASIC OPERATION

❶ Press the MENU button of remote control/front control panel.
The menu is displayed on the screen.
See the following pages for each menu.

❷ Press the FUNC button to select the desired item.

❸ Press the ADJUST button to set the mode.
The item is shown in yellow when adjusting.

❹ Press the ENTER button to activate the selected mode.
When the item is shown in yellow, press the ENTER button to select the next item.
Press the MENU button to return to the normal picture.

* 1 You can set the mode of each VIDEO input terminal.
* 2 This menu is displayed on the screen when only inputting the signal with horizontal scanning frequency of approx. 33kHz.

NOTE:
The previous setting returns if the CANCEL button is depressed during set-up.

19

SETTING THE MENU IN RGB SIGNAL INPUT MODE

```
RGB1 MENU <**>

  MEMORY NAME    ••••••••      ❶
  H-SCAN         A             ❷
  CLAMP          SYNC          ❸
  HDTV           ON↓           ❹

  SET UP ↓                     ❻

 Press < MENU > to  return
```

```
RGB2 MENU <**>

  MEMORY NAME    ••••••••      ❶
  H-SCAN         A             ❷
  CLAMP          SYNC          ❸


  SET UP ↓                     ❻

 Press < MENU > to  return
```

```
RGB3 MENU <**>

  MEMORY NAME    ••••••••      ❶
  H-SCAN         A             ❷
  TTL-COLOR      AUTO          ❺


  SET UP .                     ❻

 Press < MENU > to  return
```
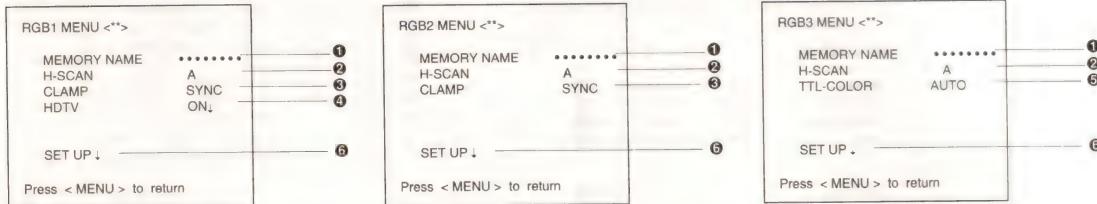
❶ MEMORY NAME

This mode is to register the signal name of memorized signal (max. eight letters).
When the ADJUST button is pressed, the letters will be switched in the order of 0....9 →
A.....Z, symbols. Press the ENTER button to determine a letter every time the letter is selected.
- When setting the name of less than eight letters, press the ENTER buttons to compensate for the remaining space.
- Press the CANCEL button to delete one letter.

❷ H-SCAN

This mode is to set retrace time.
When the ADJUST button is pressed, the display will be switched in the order of A→B→C→A...
The retrace time is shown below:

    A : 4.5µ sec or more
    B : 3.5µ sec or more
    C : 3.0µ sec or more

❸ CLAMP

This mode is to set clamp position by pressing the ADJUST button.
BACK PORCH: If inputting sync-on green signal
SYNC: for normal use

❹ HI-VISION

This mode is to turn ON when connecting with the HI-VISION by pressing the ADJUST button.
The mode is displayed on the screen only when inputting the signal with horizontal scanning frequency of approx. 33kHz.
When the ENTER button is pressed with the HI-VISION turned ON, HI-VISION menu is displayed. This menu is set to ASPECT and INPUT the type of input signal by pressing the ADJUST buton.
- ASPECT: 16:9   - INPUT: Y,Pb,Pr   (Y,Pb, Pr signal)
          4:3   GBR TTL   (RGB TTL signal including separate sync.)

❺ TTL-COLOR

This mode is to set the color mode.
When the ADJUST button is pressed, the display will be switched in the order of AUTO →8→16→64→AUTO.....
- When the color mode set to "AUTO", the color mode in EGA signal is set automatically.

❻ SET UP

When the ENTER button is pressed, SET UP MENU is displayed.
See page 22 for details.

SETTING THE MENU
IN VIDEO SIGNAL INPUT MODE

```
VIDEO 1 MENU

   SCAN        OVER ────────────❶
   SYSTEM      AUTO ────────────❷
   BLUE-ONLY   OFF ─────────────❸
   AFC         FAST ────────────❹

   SET UP↓ ──────────────────────❺

Press < MENU > to return
```
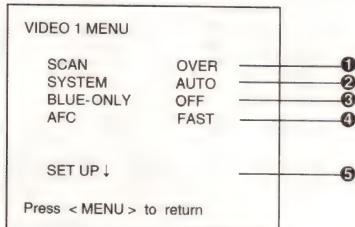
❶ SCAN
This mode is to select over-scan or under-scan by pressing the ADJUST button.

OVER: over-scan
UNDER: under-scan

❷ SYSTEM
This mode is to select the video color system.
When the ADJUST button is pressed, the display will be switched in the order of AUTO → NTSC → NTSC 4.43 → PAL → SECAM → AUTO....
- Normally, set the color system to "AUTO". If a signal is not automatically selected in the "AUTO" mode, set the system to the signal desired with the ADJUST button.

❸ BLUE-ONLY (NTSC only)
This mode is to turn BLUE ONLY on or off by pressing the ADJUST button.
Turn "ON" if adjusting tints and color with the color bar VIDEO signal.
Exit from the menu mode, and B/W picture is displayed on the screen.
Adjust so that the luminance of white picture is uniform by pressing ADJUST button.

❹ AFC
This mode is to select FAST or SLOW by pressing the ADJUST button if the picture is distorted when using a VCR. Select either mode that reduces the distortion.
Normally, set to "FAST".

❺ SET UP
When the ENTER button is pressed, SET UP MENU is displayed.
See page 22 for details.

SETUP MENU

```
SET UP MENU

   ID NUMBER      0 0 ──────────────● ①
   ON SCREEN      ON ───────────────● ②
   LAST POWER     OFF ──────────────● ③
   SYNC SEL.      SYNC ON G ────────● ④
   PURITY         0 0 ──────────────● ⑤
   AUTO P. OFF    OFF ──────────────● ⑥
   MEMORY COPY ↓ ───────────────────● ⑦
   MEMORY NAME LIST ↓ ──────────────● ⑧
 Press < MENU > to return
```
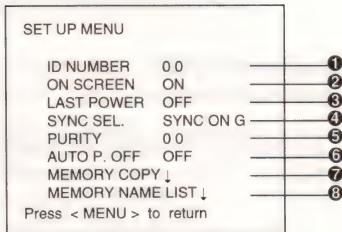
- The same SET UP MENU is displayed whichever terminal (RGB or VIDEO) you use.

① ID NUMBER

This mode is to set the ID number of the monitor you desire to control.

You can control more than one of several monitors with a single remote control by selecting the ID number. See page 26 for details.

Set the ID number (01-99) with the ADJUST buttons on the remote control.

② ON SCREEN

This mode is to turn the on-screen display on or off by pressing the ADJUST button.

ON: displayed
OFF: not displayed

③ LAST POWER

ON: The last operating conditions when the main power is switched off is memorized.
OFF: The last operating conditions when the main power is switched off is not memorized.

④ SYNC SEL.

This mode is to select SYNC ON GREEN or ANALOG SYNC according to the input signal by pressing the ADJUST buttons.

SYNC ON GREEN: The green output signal including the sync.
ANALOG: The analog sync signal including the sync.

- When inputting TTL level sync signal at the same time, TTL sync signal is given priority.

⑤ PURITY

This mode is to adjust color purity.

When the ADJUST (UP) button is pressed, the display will be switched in the order of 00 → S1 →.....S30 → S31.
When the ADJUST (DOWN) button is pressed, the display will be switched in the order of 00 → N1 →....N30 → N31.
See page 23.

⑥ AUTO POWER OFF

This mode is to turn off the monitor automatically after a predetermined period without input signal.
When the ADJUST button is pressed, the display will be switched in the order of OFF → 5min → 10min → 15min → 20min →.....→ 20min → 60min. (every 5 minitues)

⑦ MEMORY COPY

This mode is to copy the contents of the user setting to monitors (AM-4201R).
When the ENTER button is pressed, MEMORY COPY MENU is displayed.
See page 27.

⑧ MEMORY NAME LIST

This mode is to display the list of memorized signal name, frequencies or input terminal on the screen when pressing ENTER button.
See page 24.

22

Adjusting the color purity

This color monitor has a large screen picture tube and color purity may be affected slightly by the earth's magnetic field. For best results, follow the instruction below for color purity adjustment.

❶ Select "PURITY" in the SETUP MENU by pressing the FUNCTION button.

```
SET UP MENU

     ID NUMBER          0 0
     ON SCREEN          ON
     LAST POWER         OFF
     SYNC SEL.          SYNC ON G
  ▷ PURITY             0 0
     AUTO P. OFF        OFF
     MEMORY COPY ↓
     MEMORY NAME LIST ↓
Press < MENU > to  return
```

❷ Adjust the color purity (N31 - S31) so that the screen is uniformly blue by pressing the ADJUST button.

```
SET UP MENU

     ID NUMBER          0 0
     ON SCREEN          ON
     LAST POWER         OFF
     SYNC SEL.          SYNC ON G
  ▷ PURITY             S20
     AUTO P. OFF        OFF
     MEMORY COPY ↓
     MEMORY NAME LIST ↓
Press < MENU > to  return
```

❸ Press the FUNCTION button when the screen turns blue.
● Every time the FUNCTION button is pressed, the background color on the screen turns red, blue and green.
❹ Make sure that the screen color is even especially on the corner of the screen whenever color is not pure adjust color purity so that each color is even.
● Color may be affected depending on the installation place (e.g.the place subject to the magnetic field like buildings).
❺ Press the ENTER button.
❻ If color purity is not corrected by the above adjustment, press the DEGAUSS button on the front control pane or on the remote control.

NOTE:
● Adjust color purity whenever the monitor is installed in a different place.
● Purity adjustment cannot be operated for approx. 10 seconds after pressing the DEGAUSS button.

RGB MEMORY

This monitor's microcomputer can memorize max. 32 kinds of optimum screen conditions (size, brightness, etc.) suitable for each connected equipment.

Memorizing the screen conditions

❶ Display the picture of RGB signal on the screen.
● The memory number is shown in yellow on the screen.
❷ Adjust the size, brightness, etc. of the displayed picture according to your preference.
❸ Press the ENTER button.
● The memory number is memorized.
The memory number turns white after memorized.
Memorize the memory name in the "MEMORY NAME" of the menu, if necessary.
(See page 20)

```
RGB<01>
```
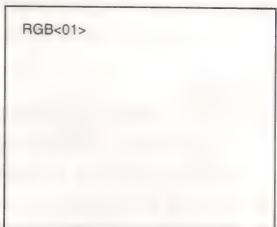
NOTE:

The monitor detects the horizontal/vertical frequencies, the polarity of the sync. signal and the input terminal to find whether the screen condition has already been memorized. Therefore, if a connected equipment has the similar signal (horizontal/vertical frequencies, the polarity of the sync. signal and the input terminal) to that of the memorized equipment, the memorized screen condition may be called automatically.
The 33rd memory number cannot be memorized though shown on the screen. If necessary, memorize the a new screen condition by erasing the unnecessary number. (See page 25 "Canceling the memory number".)

MEMORY LIST

● The memorized screen condition list (memory name, horizontal/vertical frequencies, the polarity of the sync. signal and input terminal) is displayed.

● The vertical frequencies of more than 100Hz are shown in double figures.

● The display of horizontal/vertical frequencies is a rough value for detecting the RGB signal.

```
MEMORY NAME LIST
                        HKHz  VHz
 ▷ 01  MAC2 • • • •     35.0  67  1
   02  PS/2 • • • •     31.5  59  2
   03  • • • • • • •    00.0  00  -
   04  • • • • • • •    00.0  00  -
   05  • • • • • • •    00.0  00  -
   06  • • • • • • •    00.0  00  -
   07  • • • • • • •    00.0  00  -

 Press < MENU > to return
```

Memory number

Input terminal

Signal name

Horizontal frequency

Vertical frequency

Calling the memory number

If the memory number is not called automatically, follow the instruction below.
❶ Display the memory number on the screen by pressing the MEMORY SCAN button(MEM+/MEM-).
❷ Press the ENTER button.
   The memorized screen condition is called.

NOTE:

- If the called horizontal/vertical frequencies, the polarity of the sync. signal and the input q terminal are different from those of the displayed picture, the memory number is shown in red. When the ENTER button is pressed in this condition, a screen condition of the displayed picture is replaced with the existing one.
- If more than one the horizontal/vertical frequencies, the polarity of the sync. signal and the input terminal of the same contents are memorized, the smaller memory number will be called.
- The memorized screen condition may not be called correctly because of change of frequencies of the signal source.

Canceling the memory number

❶ Select "MEMORY NAME LIST" in the SETUP MENU.
   (See page 22.)

```
SET UP MENU

   ID NUMBER        0 0
   ON SCREEN        ON
   LAST POWER       OFF
   SYNC SEL.        SYNC ON G
   PURITY           0 0
   AUTO P. OFF      OFF
   MEMORY COPY ↓
 ▷ MEMORY NAME LIST ↓
Press < MENU > to return
```

❷ Press the ENTER button.
   The list of memorized signals is shown on the screen.

```
MEMORY NAME LIST
                      HKHz  VHz
 ▷ 01  MAC2 • • • •   35.0   67  1
   02  PS/2 • • • • • 31.5   59  2
   03  • • • • • • • • 00.0   00  -
   04  • • • • • • • • 00.0   00  -
   05  • • • • • • • • 00.0   00  -
   06  • • • • • • • • 00.0   00  -
   07  • • • • • • • • 00.0   00  -

Press < MENU > to return
```

❸ Position the cursor on the memory number to be canceled by pressing the FUNCTION button.
❹ Press the RESET button.
   The memory number is shown in yellow.

```
MEMORY NAME LIST
                      HKHz  VHz
   01  MAC2 • • • •   35.0   67  1
 ▷ 02  PS/2 • • • • • 31.5   59  2
   03  • • • • • • • • 00.0   00  -
   04  • • • • • • • • 00.0   00  -
   05  • • • • • • • • 00.0   00  -
   06  • • • • • • • • 00.0   00  -
   07  • • • • • • • • 00.0   00  -

Press < MENU > to return
```

❺ Press the RESET button again.
   The memory number is canceled.
   When calling off canceling the memory number, press the CANCEL button before the step ❹.

```
MEMORY NAME LIST
                      HKHz  VHz
   01  MAC2 • • • •   35.0   67  1
   02  • • • • • • • • 00.0   00  -
   03  • • • • • • • • 00.0   00  -
   04  • • • • • • • • 00.0   00  -
   05  • • • • • • • • 00.0   00  -
   06  • • • • • • • • 00.0   00  -
   07  • • • • • • • • 00.0   00  -

Press < MENU > to return
```

ID numbers

If installing more than one monitors in the same place, operating remote controls may interfere with each other. In this case, set the ID number for each monitor to operate the monitors individually with one remote control.

Setting the ID number

Set the ID number for each monitor using the corresponding remote control.

❶ Select "ID NUMBER" in the SETUP MENU.
   (See page 22.)

```
SET UP MENU

▷ ID NUMBER        0 0
  ON SCREEN        ON
  LAST POWER       OFF
  SYNC SEL.        SYNC ON G
  PURITY           0 0
  AUTO P. OFF      OFF
  MEMORY COPY ↓
  MEMORY NAME LIST ↓
Press < MENU > to return
```

❷ Input the ID number (01 - 99) by pressing the ADJUST buttons.
● Every time the ADJUST button is pressed, the number is switched 01→02→03→...99.
● The ID number can be inputted by pressing the number keys of the remote control while shown in yellow.
❸ Press the ENTER button.
   The inputted ID number is set.

```
SET UP MENU

▷ ID NUMBER        0 1
  ON SCREEN        ON
  LAST POWER       OFF
  SYNC SEL.        SYNC ON G
  PURITY           0 0
  AUTO P. OFF      OFF
  MEMORY COPY ↓
  MEMORY NAME LIST ↓
Press < MENU > to return
```

Operating the monitors

After setting the ID number, follow the instruction below when controlling monitors with the remote control.

❶ Input the ID number of the monitor you desire to control by pressing the number keys of the remote control.
❷ Press the ENTER button.
● The ID number is shown in white on the screen and you can control the monitor of the ID number.

NOTE:
● Operate the remote control before the ID number shown in white disappears on the screen. After the number has disappeared, operations except ❶ is not received.

Canceling the ID number

❶ Input the ID number to be canceled by pressing number keys of the remote control.
❷ Select "ID NUMBER" in the SETUP MENU.

```
SET UP MENU

▷ ID NUMBER        0 1
  ON SCREEN        ON
  LAST POWER       OFF
  SYNC SEL.        SYNC ON G
  PURITY           0 0
  AUTO P. OFF      OFF
  MEMORY COPY ↓
  MEMORY NAME LIST ↓
Press < MENU > to return
```

❸ Set the ID number to "00" by pressing the ADJUST button.
❹ Press the ENTER button.
   The ID number is canceled.

```
SET UP MENU

▷ ID NUMBER        0 0
  ON SCREEN        ON
  LAST POWER       OFF
  SYNC SEL.        SYNC ON G
  PURITY           0 0
  AUTO P. OFF      OFF
  MEMORY COPY ↓
  MEMORY NAME LIST ↓
Press < MENU > to return
```

Copying the user setting (Memory copy)

The user setting can be copied to monitors (model; AM-4201R). Follow the instruction below using the front control panel.

To AV-NETWORK output terminal

To AV-NETWORK input terminal

Ⓐ Source Monitor

```
MEMORY COPY

▷ MEMORY DATA        SEND
  ENTER:START




  Press < MENU > to return
```
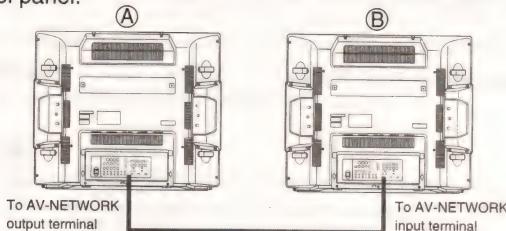
❶ Select "MEMORY COPY" in the SETUP MENU of the each monitor.
❷ Press the ENTER button.
   The MEMORY COPY display is shown on the screen.
❸ Select "SEND" by pressing the ADJUST button of the monitor Ⓐ.
   The monitor Ⓐ is set to the sending side.
❹ Press the ENTER button of the monitor Ⓐ.
❺ Press the ENTER button again.
   The monitor Ⓐ of the sending side becomes in the stand-by condition. "ENTER: START" is shown in yellow.

Ⓑ Copying Monitor

```
MEMORY COPY

▷ MEMORY DATA        RECEIVE
  ENTER:START




  Press < MENU > to return
```

❻ Select "RECEIVE" by pressing the ADJUST button of the monitor Ⓑ.
   The monitor Ⓑ is set to the receiving side.
❼ Press the ENTER button of the monitor Ⓑ.
❽ Press the ENTER button again.
   The monitor Ⓑ of the receiving side becomes in the stand-by condition. "ENTER: START: is shown in yellow.
❾ Connect the cable between the AV NETWORK terminals.
❿ Press the ENTER button of the monitor Ⓑ.
   The monitor Ⓑ starts to receive the user setting.
⓫ Press the ENTER button of the monitor Ⓐ.
   The monitor Ⓐ starts to send the user setting.
The number 1 to 32 is displayed in order during the transmission.
When memory copy is completed.
At this moment, "COMPLETED" appears on the screen of the monitor Ⓑ.

Ⓐ Source Monitor

```
MEMORY COPY

  MEMORY DATA        SEND
▷ ENTER:START


      0 1


  Press < MENU > to return
```

Ⓑ Copying Monitor

```
MEMORY COPY

  MEMORY DATA        RECEIVE
▷ ENTER : START


      COMPLETED


  Press < MENU > to return
```

NOTE:

- Follow all the steps again if an error occurs during operating ("ERROR" is displayed).
- Press the CANCEL button to cancel the memory copy.
- In memory copy, use the front panel control. After connecting the cable between AV-NETWORK terminals, operating one monitor with the remote control will operate the other.
- In the stand-by condition ("ENTER:START" is shown in yellow) or in sending/receiving mode, it is impossible to operate the remote control.
- When starting memory copy, set the monitor of the receiving side in the receiving mode before setting the sending side in the sending mode.

6. PROGRAMMING THE REMOTE CONTROL

Functions of the remote control

Functions of the remote control can be changed by switching the pages as shown below.
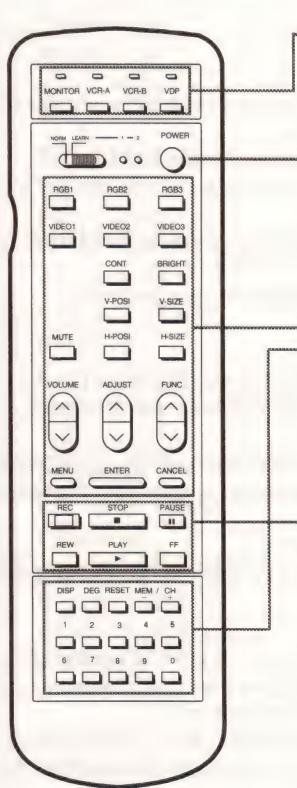
	MONITOR	VCR-A VCR-B	VDP
POWER button	Can turn on or off the power of AM-4201R.	Can turn on or off the power of MITSUBISHI VCR ('86 to current models).	Can turn on or off the power of Video Disk Player (A & D, PIONEER, TEAC).
Image adjustment buttons	Can control AM-4201R and adjust the picture.		
Video/ Video Disk Player buttons	Can control MITSUBISHI Video Disk Player.	Can control MITSUBISHI VCR ('86 to current models).	Can control Video Disk Player (A & D, PIONEER , TEAC).

"Page" means:

This monitor includes the function of controlling other equipments (VCR-A, VCR-B and VDP).
When using the equipments including this monitor, select each page of the one to be controlled with the page buttons.

▶ The remote controls which cannot learn
● American or European -made units which have different (frequency) modulation of the remote control codes.
● SHARP Willing TV or VCR and CD cordes of audio multi remote control.

NOTE:
● The remote control cannot learn the functions of non-infrared remote control.
● The remote control may not learn a few functions or a part of the function.
● The remote control can learn a maximum of 176 functions. However, in some cases, it may not learn 176 functions depending on the remote control to be learned.

The remote control is capable of learning the functions of other remote controls you may have. This feature allows operation of other components with this remote control. For learning to take place, the other remote controls must be of the infrared type.
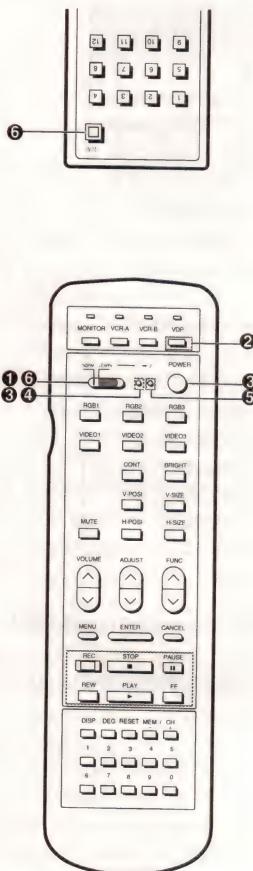
How to learn another unit's remote functions

Programming the remote control

The POWER button of the monitor's remote control will learn the function of the power switch of the VDP's remote control.

❶ Place the two remote controls end to end about 2 inches apart.

❷ Set the 'NORM/LEARN" switch of this monitor's remote control to the "LEARN" position.

❸ Press the SELECT button that corresponds to the type of equipment using the other remote controls (MONITOR, VCR-A, VCR-B, VDP).

❹ Press the desired button to learn on this monitor's remote control .
The learning indicator "1" will light up.

NOTE:

If the button which cannot be learned is pressed in the learning mode (the learning indicator "1" lights up), the remote control will be unable to learn the function. In this case, press the correct button again.

❺ Press and hold the corresponding button on the other remote control until the learning indicator "1" turns off. When the button is released, the learning indicator "2" will light up.
Repeat steps ❸ - ❺ for learning other functions.

❻ Set the "NORM/LEARN" switch of this monitor's remote control unit to the "NORM" position.

● Depending on the unit, some commands may not be learned by steps ❶ to ❺. In this case, try steps ❶ - ❺ once again, and press and hold the same button again until both learning indicators "1" and "2" light up.

● If the distance between the two remote control in step ❶ is too short or too long, the learning process may not be completed. In this case, change the distance between the two remote control a little and then repeat steps ❷ - ❺ once again.

● The buttons can re-learn new commands by following steps ❶ - ❻ again.

Canceling the learned functions

To erase the learned function of each button:

❶ Set the 'NORM/LEARN"switch to the "LEARN" position.

❷ Pressing the button whose learned function to be erased, set the learn switch to the "NORM" position.

NOTE:

● Programming the remote controls in an area where they may not control the equipment. (Switch off the power of the equipment.)

● If the remote control is left without batteries installed for more than 1 hour, the learned functions may be erased.

● Learning does not take place if more than one button is pressed at the same time.

7. RS-232C INTERFACE

This unit can be controlled by using the personal computer equipped with the RS-232C connector.

RS-232C command

NO.	FUNCTIONS	COMMAND
1	CALL STATUS	STTS
2	POWER OFF	POW0
3	POWER ON	POW1
4	INPUT RGB 1	RGB1
5	INPUT RGB 2	RGB2
6	INPUT RGB 3	RGB3
7	INPUT VIDEO1	VDO1
8	INPUT VIDEO 2	VDO2
9	INPUT VIDEO 3	VDO3
10	VOLUME UP	VOL+
11	VOLUME DOWN	VOL -
12	BASS UP	BAS+
13	BASS DOWN	BAS -
14	TREBLE UP	TRB+
15	TREBLE DOWN	TRB-
16	BALANCE UP	BAL+
17	BALANCE DOWN	BAL-
18	CONTRAST UP	CNT+
19	CONTRAST DOWN	CNT-
20	BRIGHTNESS UP	BRT+
21	BRIGHTNESS DOWN	BRT-
22	H-SIZE UP	HSZ+
23	H-SIZE DOWN	HSZ-
24	V-SIZE UP	VSZ+
25	V-SIZE DOWN	VSZ-
26	H-POSITION UP	HPO+
27	H-POSITION DOWN	HPO-
28	V-POSITION UP	VPO+
29	V-POSITION DOWN	VPO-
30	COLOR UP	COL+
31	COLOR DOWN	COL-
32	TINT UP	TNT+
33	TINT DOWN	TNT-
34	NR OFF	NZR0
35	NR ON	NZR1
36	TEMP LOW	TMP0
37	TEMP HIGH	TMP1
38	UNDER-SCAN	SCN0
39	OVER-SCAN	SCN1
40	SYSTEM AUTO	SYS0
41	SYSTEM NTSC	SYS1
42	SYSTEM NTSC 4.43	SYS2

NO.	FUNCTIONS	COMMAND
43	SYSTEM PAL	SYS3 ⌷
44	SYSTEM SECAM	SYS4 ⌷
45	BLUE ONLY OFF	BLO0 ⌷
46	BLUE ONLY ON	BLO1 ⌷
47	AFC FAST	AFC0 ⌷
48	AFC SLOW	AFC1 ⌷
49	H-SCAN A	HSC0 ⌷
50	H-SCAN B	HSC1 ⌷
51	H-SCAN C	HSC2 ⌷
52	CLAMP (BACK PORCH)	CLP0 ⌷
53	CLAMP (SYNC)	CLP1 ⌷
54	HI-VISION OFF	HVI0 ⌷
55	HI-VISION ON	HVI1 ⌷
56	HI-VISION INPUT RGB TTL	HIN0 ⌷
57	HI-VISION INPUT Y, Pb, Pr	HIN1 ⌷
58	ASPECT (4:3)	ASP0 ⌷
59	ASPECT (16:9)	ASP1 ⌷
60	TTL COLOR (AUTO)	TTL0 ⌷
61	TTL COLOR (8)	TTL1 ⌷
62	TTL COLOR (16)	TTL2 ⌷
63	TTL COLOR (64)	TTL3 ⌷

NOTE:
The mark "⌷" indicates a delimitter code "CR + LF".

| ERROR	CAUSE
ER0	Command input mistake
ER1	Invalid command at present
ER2	The power is not supplied to the unit.
ER3	Inputted value is out of range

Connection with a computer through the RS-232C terminal

RS-232C cable
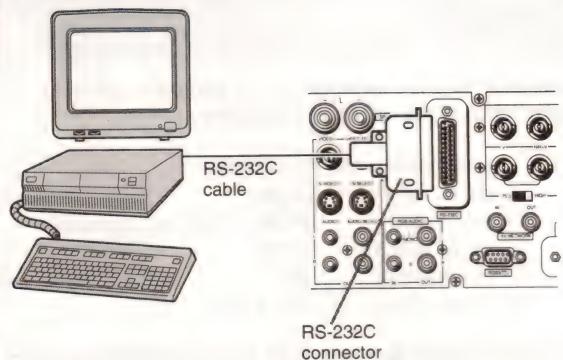
RS-232C connector

<RS-232C terminal>
RS-232C terminal is equipped with 25 pin D-SUB type/ connector. The relation between each pin and signal/ I/O is shown below.

▷ To connect computers, use the cross cable with the wiring shown in the Figure A below.
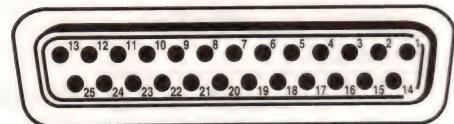
Pin no.	Signal line names	Meanings	Directions from Host
1	FG	Frame ground	—
2	TXD	Transmitted data	Output
3	RXD	Received data	Input
4	RTS	Request to send	Output
5	CTS	Clear to send	Input
6	DSR	Data set ready	Input
7	SG	Signal ground	—
8	CD	Received line signal carrier detect	Input
20	DTR	Data terminal ready	Output

Figure A
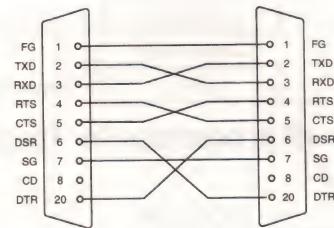
RS-232C communication conditions

Set the RS-232C protocol of the computer (HOST) according to the following conditions.

- ○ Transmission rate   9,600bps
- ○ Data bit length   8 bits
- ○ Parity check   Parity check not operated.
- ○ Stop bit length   2 bits
- ○ X flow control   Nil
- ○ Delimitter code   CR + LF

Basic procedure for transmitting and receiving command

❶ Correct transmission and reception

HOST	MONITOR	
Command⏍		
	RC⏍	Command received
	Carried out	
	EX⏍	Command carried out
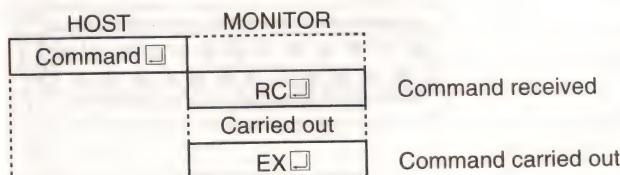
❷ Reception command error

HOST	MONITOR	
Command⏍		
	ER⏍	Error command received

❸ Abnormal operation

HOST	MONITOR	
Command⏍		
	RC⏍	Command received
	Carried out	
	ER⏍	Error command received
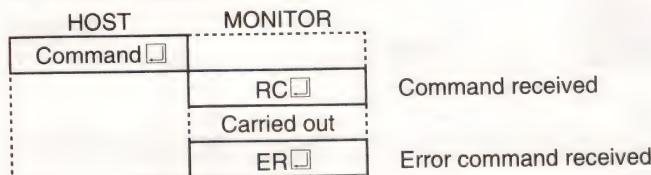
Example of procedure for transmitting and receiving command

POWER OFF

HOST	MONITOR	
POW 0 ⏍		
	RC⏍	
		POWER OFF carried out
	EX⏍	

POWER ON

HOST	MONITOR	
POW 1 ⏍		
	RC⏍	
		POWER ON carried out
	EX⏍	

33
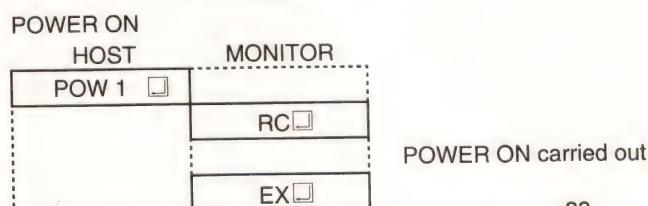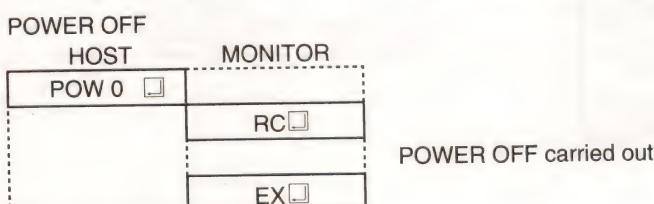
Example of operating program (BASIC)

```
1000        ON STOP GOSUB 9010:STOP ON
1010        'RS-232C initial setting
1020        '
1030        OPEN "COM1:N8NS" AS#1
1040        'key  buffer clear
1050        FOR I=1                 TO 10    :AS=INKEY$: NEXT I
1060        S%=1
2000        'Reading keyboard input
2010        'Storing inputted data inSD$ and displaying on the screen
2020        A$=INKEY$
2030        IF A$="" THEN 3020
2040        IF S%=0 THEN 2070
2050        S%=0:SD$=""
2060        IF POS(0)<>0 THEN PRINT
2070        I=ASC(A$)
2080        Storing the input of 43(+) to 90(Z) by ASCII codes in SD$
2090        IF I<43 OR I>90 THEN 2120
2100        PRINT A$;:SD$+A$:GOTO 2020
2110        'BS, ←, When the DEL key is pressed, a letter before that is cancelled.
2120        IF I<>8 AND I<>29 AND I<>127 THEN 2190
2130        IF LEN(SD$)=0 THEN 2020
2140        SD$=LEFT$(SD$,LEN(SD$)-1)
2150        I=POS(0):J=CSRLIN:I=I-1:IF I=-1 THEN I=79:J=J-1
2160        LOCATE I,J:PRINT" ";:LOCATE I,J:GOTO 2020
2170        'Transmitting a command to the monitor
2180        'After pressing "CR", transmit SD$ to RS-232C port
2190        IF I<>13 THEN 2020
2200        PRINT #1,SD$
2210        SD$="":GOTO 2020
3000        'Receiving the data sent back from the monitor
3010        'After receiving data from RS-232C port, the data is displayed on the screen.
3020        IF LOC(1)=0 THEN 2020
3030        IF S%=1 THEN 3070
3040        '
3050        IF POS(0)<>0 THEN PRINT
3060        S%=1
3070        A$=INPUT$(1,#1)
3080        '
3090        IF ASC(A$)=13 THEN 3020
3100        PRINT A$;:GOTO 3020
9000        'When the STOP key is pressed, the RS-232C port is closed.
```

- Make the above program, input commands to the monitor, and press the RETURN key.
- The data sent from the monitor is displayed on the monitor screen connected to the personal computer.
- See page 30-31 for Commands and Response data codes.

CAUTION:
- This program is based on N88-BASIC. Change programs if using other types of personal computers.

8. INPUT/OUTPUT SIGNAL SPECIFICATIONS

1. COMPOSITE VIDEO SIGNAL

(1) INPUT
- Connectors
- BNC/RCA type (Front terminal)
  S-TERMINAL
- Input voltage 1.0Vp-p ±10%
- Input impedance:75Ω
- Signal polarity: Positive
                 Sync:Negative

(2) SCANNING FREQUENCY

	NTSC	PAL/SECAM
Horizontal:	15.734kHz	15.625kHz
Vertical:	59.94Hz	50Hz

BNC Type   RCA Type

S-terminal

(3) OUTPUT
- Connectors
  BNC Type
- Output voltage: 1.0Vp-p
- Output impedance:75Ω

2. RGB TTL SIGNAL

(1) INPUT
- Connectors
  D-SUB 9 PIN

❶ RGB VIDEO SIGNAL
- Input voltage: Low level: 0-0.4V
                   High level: 2.7-5.0V
- Input impedance: 470Ω pull down
- Input current: −20mA max.
- Signal polarity: Positive

D-SUB 9 pin

❷ SYNC. SIGNALS
- Input voltage: Low level: 0-0.4V
                   High level: 2.7-5.0V
- Input impedance: 1kΩ pull down
- Input current: Separate or Composite
- Signal polarity: Both polarities available

❸ SCANNING FREQUENCY:Automatic Synchronization
  Horizontal: 15.7/20-35.0kHz
  Vertical: 45-120Hz

D-SUB 9 PIN ASSIGNMENT AND SIGNAL LEVEL

1) COLOR GRAPHICS TTL 8/16/64 COLORS

PIN NO.	8 COLORS	16 COLORS	64 COLORS	POLARITY
1	GND	GND	GND	
2	Unused	Unused	Secondary Red Video	TTL Positive
3	Red Video	Red Video	Primary Red Video	TTL Positive
4	Green Video	Green Video	Primary Green Video	TTL Positive
5	Blue Video	Blue Video	Primary Blue Video	TTL Positive
6	Unused	Intensity	Intensity/Secondary Green Video	TTL Positive
7	Unused	Unused	Primary Red Video	TTL Positive
8	Horizontal Sync./Composite Sync.	Horizontal Sync./Composite Sync.	Horizontal Sync./Composite Sync.	TTL Positive/Negative
9	Vertical Sync.	Vertical Sync.	Vertical Sync.	TTL Positive/Negative

16/64 DISPLAY COLORS ACCORDING TO SYNC. SIGNAL POLARITY

DISPLAY COLORS	SYNC. SIGNAL POLARITY	
	HORIZONTAL SYNC.	VERTICAL SYNC.
16 Colors	Positive	Positive
	Negative	Negative
64 Colors	Positive	Negative

D-SUB 15 PIN ASSIGNMENT AND SIGNAL LEVEL

PIN NO.	SIGNAL	POLARITY
1	Red Video	$0.7V_{P-P}$, $75\,\Omega$ Positive
2	Green Video	$0.7V_{P-P}$, $75\,\Omega$ Positive
3	Blue Video	$0.7V_{P-P}$, $75\,\Omega$ Positive
4	Unused	
5	Unused	
6	Red GND	
7	Green GND	
8	Blue GND	
9	Unused	
10	GND	
11	Unused	
12	Unused	
13	Horizontal Sync./Composite Sync.	TTL Positive/Negative
14	Vertical Sync.	TTL Positive/Negative
15	Unused	

3. RGB ANALOG SIGNAL

(1) Input
- Connectors
- BNC Type   (RGB 1)
  D-SUB 15Pin   (RGB 2)

❶ RGB VIDEO SIGNAL
- Input voltage: 0.7Vp-p
- Input impedance: 75Ω
- Signal polarity: Positive

BNC Type

D-SUB 15 pin

❷ SYNC. SIGNALS
- Input voltage: TTL level
                         Low level: 0-0.4V
                         High level: 2.7-5.0V
                         ANALOG level
                         0.3 – 1.0Vp-p (only composite sync signal)
- Input impedance: 10kΩ pull down
- Signal type: Separate/Composite/Green+Sync.
- Signal polarity: Both polarities available
                         Green + Sync.: Negative

❸ SCANNING FREQUENCY : Automatic Synchronization
Horizontal: 15.7/20-64.0kHz
Vertical: 45-120Hz

(2) Output

- Connector
  BNC Type/
  D-SUB 15 pin   R/G/B/H/V
- Output voltage: 0.7Vp-p
- Output impedance: Select 75Ω /HIGH of IMPEDANCE SELECT SWITCH

4. AUDIO SIGNAL

(1) Input
- Connectors
- RCA JACK <RGB AUDIO> is used as <RGB1>. <RGB2>. and <RGB3>
- Input level: 473mVrms
- Input impedance   47kΩ or more

RCA Type

(2) Output

- Connector
  RCA JACK AUDIO Through out
  Select out variable
- Output level: 473mVrms
- Output impedance   4.7kΩ or less

(2) Speaker Output

Speaker terminal
- Rated output: 5W+5W
- Output impedance: 8Ω

5. TIMING CHART

SEPARATE

HORIZONTAL

VERTICAL

Sync. Polarity : Positive/Negative
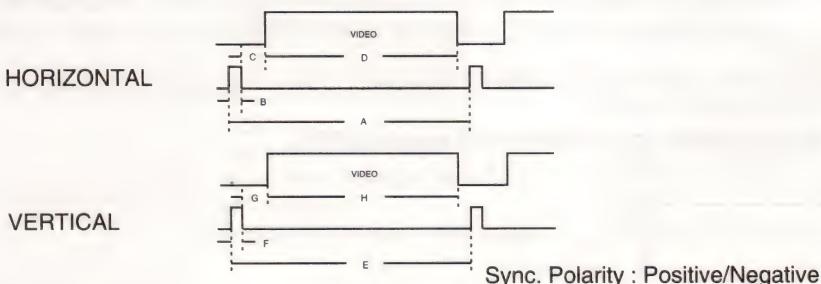
TIMING EXAMPLE

	fH	21.8kHz	31.47kHz	35.28kHz	48.78kHz
HORIZONTAL	Aμs	45.75	31.78	28.34	20.1
	Bμs	4.92	3.81	2.0	1.12
	Cμs	1.65	1.9	3.37	3.8
	Dμs	39.31	25.42	21.18	15.46
VERTICAL	E line	366	525	525	667
	F line	13	2	3	3
	G line	2	32	39	39
	H line	350	480	480	624

# 9. SPEAKERS INSTALLATION

CONNECTING OF SPEAKER CORD

① Twist the strands at the end of the lead wires.
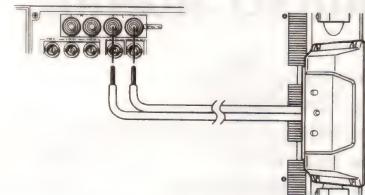
② To connect the SPEAKER OUTPUT of the monitor to the left speaker, loosen the black terminal <L–> of SPEAKER OUTPUT, install the twisted lead wire into the hole, and tighten the lever to lock the wire into place.

③ Loosen the red terminal <L+> of SPEAKER OUTPUT, install the twisted lead wire into the hole, and tighten the lever to lock the wire into place.

④ Connect the right speaker to the monitor the same method as above.

⑤ Gently pull the wires to make sure that the wires are locked into place.

NOTE:
- Make sure the speaker wire is inserted up to the wire insulation of the hole.
- Connect lead wires to <SPEAKER OUTPUT> of the monitor as indicated above.
- When installing the external speakers to the monitor, use the speaker of impedance 8Ω or more and rated input 5W or more.
- When the external speaker is put close to the monitor, the color of the monitor screen will be affected by the speaker. Use the impurity-protected speakers or keep the speakers apart from the monitor so that color impurity may not occur.
- Connecting the speaker output and stereo amplifier of the monitor to the same speaker in parallel will damage the monitor. Do not connect in that way.
- Do not use the monitor's speaker in combination with audio amplifier.
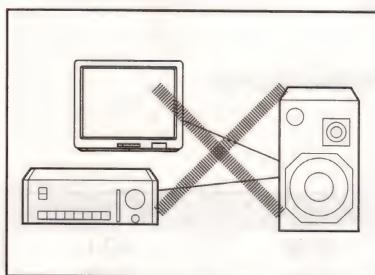
10. TROUBLESHOOTING

| Problem	Cause	Correction
The power does not switch on.	• The power cord is not plugged into power inlet.	Plug the power cord into power inlet.
No picture appears on the screen.	• Input signal is not selected. • Sync. signal is not inputted. • Horizontal frequency is beyond the limits. • Impedance selector switch is not set correctly.	• Set the input signal correctly. • Check the connection and make sure of the signal level. • Set the impedance selector switch correctly.
Synchronization is incorrect.	• Sync. signal is not inputted. • The signal level is not appropriate. • Impedance selector switch is not set correctly.	• Check the connection. • Input the correct level. • Set the impedance selector switch correctly.
The remote control doesn't work.	• The batteries are not installed. • The ID number is set. • Check that the SELECT button is set to monitor. • The NORM/LEARN switch is set to LEARN. • There is some obstacle between the monitor and the remote control.	• Check that the batteries are installed correctly. • See page 26. • Set the SELECT button to MONITOR. • Set the switch to "NORM". • Remove the obstacle between the monitor and the remote control.
• The picture is dark.	• The signal level is low. • Impedance selector switch is not set correctly. • Contrast/Brightness level is low.	• Input the correct level. • Set the impedance selector switch correctly. • Adjust the Contrast/Brightness correctly.
There's no color of picture.	• System is not set correctly. • BLUE ONLY is set to "ON".	• See page 21. • See page 21.
There's no sound.	• The volume level is set to minimum. • Speaker is not connected. • Sound is turned of by pressing MUTE button.	• Turn up the volume level. • Connect the speaker. • Press the MUTE button again.

Problem	Cause	Correction
The picture is colored.	• The screen is magnetized. • Purity is not adjusted correctly.	• Press the DEGAUSS button to discharge the magnetism. • See pages 5,7.
You have forgotten the ID number.	——————————	• Press the DISPLAY button. See pages 5,7.
The monitor turned off.	• AUTO POWER OFF is set.	• Press the "DISPLAY" button. See pages 5,7.
The input select switch button is not available.	• The menu is displayed.	• Exit from the menu mode.

When one of the following messages is displayed on the screen, turn off the main power switch immediately and contact your dealer.

| FAN STOP | FAN is stopped.
The monitor turns off within 30 seconds automatically. |
| OVER HEAT | Temperature inside the monitor is too high.
The monitor turns off within 15 seconds automatically. |

11. SPECIFICATION

CRT:

Viewable measurement:	40 inches
Deflection angle:	110 deg.
Shadow mask:	0.96mm-1. 1mm Stripe pitch (Invar mask)
Faceplate:	Tinted glass
Phosphor:	B22 (Medium-short persistence)

POWER SUPPLY: AC 120V, 60Hz

POWER CONSUMPTION: 350W

AUDIO OUTPUT: 5W x 5W

DISPLAY AREA: 780(H) x 580(V) mm

RESOLUTION: RGB mode: 800(H) dots x 768 (V) lines mm
Composite mode :600 lines

DIMENSIONS: 970(W) x 806(H) x 689(D) mm

WEIGHT: 125kg (276 lbs.)

SPEAKERS

Impedance:	8Ω
Rated input:	15W max.

● Design and specifications are subject to change without notice.

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MODEL NO. _____AM-4201R_____

SERIAL NO. ___100154_____

CUSTOMER NAME _____	DEALER
	_____
STREET ADDRESS _____	
	PURCHASE DATE
_____	
	_____
CITY_____ STATE _____ ZIP_____	

When requesting warranty service, please present this portion of the card to your authorized MITSUBISHI Service Center.

[SP]
AM-4201R
100154

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